

Amendments to the Claims

Please amend the claims as detailed below. This listing of claims will replace all prior versions, and listings, of claims in the application:

1-16 (Cancelled)

17. (Currently amended) A storage appliance comprising:

a network interface;

a storage medium; and

a controller coupled to the network interface and the storage medium and configured;

to ~~provide~~ establish a root partition on the storage medium, the root partition defining a plurality of characteristics of an ~~redundant-array (RA)-group~~ that includes a plurality of ~~RA-array~~ partitions, the plurality of characteristics to include a type of the array group, which indicates how data is distributed across the plurality of array partitions, or a parity rule of the array group,

to ~~provide~~ establish an ~~RA-array~~ partition on the storage medium, the ~~RA array~~ partition being one of the plurality of ~~RA-array~~ partitions,

to receive, via the network interface, a data access command multicast to the plurality of ~~RA-array~~ partitions, and

to determine that the data access command pertains to the ~~RA-array~~ partition based at least in part on the plurality of characteristics.

18. (Currently amended) The storage appliance of claim 17, wherein the controller is further configured

to receive, via the network interface, a plurality of partition commands from a host; and

to ~~provide~~ establish the root partition and the ~~RA-array~~ partition based at least in part on the plurality of partition commands.

19. (Currently amended) The storage appliance of claim 17, wherein the plurality of characteristics includes a multicast set associated with the RA-array group.

20. (Currently amended) The storage appliance of claim 19, wherein the controller is configured to receive a multicast set command from a host via the network interface, and to establish the multicast set associated with the RA-array group based at least in part on the multicast set command.

21. (Currently amended) The storage appliance of claim 17, wherein the data access command is multicast to the plurality of RA-array partitions using an Internet Protocol address.

22. (Currently amended) The storage appliance of claim 17, wherein the controller is further configured

to receive, via the network interface, another data access command multicast to the plurality of RA-array partitions;

to receive, via the network interface, a response to the another data access command; and

to disregard the another data access command based at least in part on the response.

23. (Currently amended) The storage appliance of claim 17, wherein the plurality of characteristics includes a the type of the RA-array group and a description of the plurality of RA-array partitions and the controller is further configured to determine that the data access command pertains to the RA-array partition based at least in part on the type of the RA-array group and the description of the plurality of RA-array partitions.

24. (Previously presented) The storage appliance of claim 23, wherein the type is a stripe and the plurality of characteristics further includes a length of the stripe.

25. (Currently amended) The storage appliance of claim 17, wherein the plurality of characteristics includes ~~a~~the parity ruleof the array group.

26. (Currently amended) The storage appliance of claim 17, wherein the plurality of RA-array partitions are associated with a plurality of logical block addresses (LBAs) and the controller is further configured

to calculate, based at least in part on the plurality of characteristics of the RA-array group defined in the root partition, which LBAs of the plurality of LBAs are associated with the RA-array partition.

27. (Currently amended) The storage appliance of claim 17, wherein the controller is configured to receive the data access command from a host and the controller is further configured

to transmit, via the network interface, data directly to another RA-array partition of the plurality of RA-array partitions based at least in part on the data access command.

28. (Currently amended) A method comprising:

~~providing~~establishing, on a storage medium, a root partition having a plurality of characteristics associated with an ~~redundant~~-array (RA)-group that includes a plurality of RA-array partitions, the plurality of characteristics including a type of the array group, which indicates how data is distributed across the plurality of array partitions.

~~providing~~establishing, on the storage medium, an RA-array partition of the plurality of RA-array partitions,

receiving, via a network interface, a data access command multicast to the plurality of RA-array partitions, and

determining that the data access command pertains to the RA-array partition based at least in part on the plurality of characteristics.

29. (Cancelled)

30. (Currently amended) The method of claim 28, wherein the plurality of characteristics includes a multicast set associated with the RA-array group.

31. (Currently amended) The method of claim 28, wherein the data access command is multicast to the plurality of array ~~RA~~-partitions using an Internet Protocol address.

32. (Currently amended) The method of claim 28, further comprising:

receiving, via the network interface, another data access command multicast to the plurality of array ~~RA~~-partitions;

receiving, via the network interface, a response to the another data access command; and

disregarding the another data access command based at least in part on the received response.

33. (Currently amended) The method of claim 28, wherein the plurality of characteristics includes ~~a type of the RA group and~~ a description of the plurality of array ~~RA~~-partitions and said determining that the data access command pertains to the array ~~RA~~-partition is based at least in part on the type of the RA group and the description of the plurality of array ~~RA~~-partitions.

34. (Previously presented)The method of claim 33, wherein the type is a stripe and the plurality of characteristics further includes a length of the stripe.

35. (Previously presented)The method of claim 28, wherein the plurality of characteristics includes a parity rule.

36. (Currently amended) A machine-accessible storage medium having instructions, which, when executed, results in the machine:

~~providing-establishing~~ a root partition on a storage medium, the root partition defining a plurality of characteristics of an ~~redundant~~-array (RA)-group that includes a plurality of arrayRA partitions, ~~the plurality of characteristics including a type of the array group, which indicates how data is distributed across the plurality of array partitions, or a parity rule of the array group,~~

~~providing-establishing an~~ array RA-partition on the storage medium, the array RA-partition being one of the plurality of array RA-partitions,

receiving, via a network interface, a data access command multicast to the plurality of array RA-partitions, and

determining that the data access command pertains to the array RA-partition based at least in part on the plurality of characteristics.

37. (Currently amended) The machine-accessible storage medium of claim 36, wherein the instructions, when executed, further results in the machine:

receiving, via the network interface, one or more commands from a host; and

~~providing-establishing~~ the root partition and the array RA-partition based at least in part on the received one or more commands.

38. (Currently amended) The machine-accessible storage medium of claim 36, wherein the plurality of characteristics includes a multicast set associated with the arrayRA group.

39. (Currently amended) The machine-accessible storage medium of claim 36, wherein the data access command is multicast to the plurality of array RA-partitions using an Internet Protocol address.

40. (Currently amended) An apparatus comprising:

a network interface; and

a controller configured:

to transmit, via the network interface, a first partition command to establish a root partition on a storage medium;

to transmit, via the network interface, a plurality of characteristics of an ~~redundant-array (RA)~~ group, which includes a plurality of array RA-partitions, to be stored in the root partition;

to transmit, via the network interface, a second partition command to establish an array RA-partition of the plurality of array RA-partitions, on the storage medium; and

to multicast, via the network interface, a packet to the plurality of array RA partitions, the packet having a data access command and a logical block address (LBA) to which the data access command pertains, the LBA associated with only a subset of the plurality of array RA-partitions.

41. (Currently amended) The apparatus of claim 40, wherein the controller is further configured to transmit a partition command to each of a plurality of storage appliances associated with a respective plurality of storage media to establish the plurality of arrayRA partitions.

42. (Cancelled)

43. (Currently amended) The apparatus of claim ~~42~~40, wherein the controller is configured to multicast the packet by being configured to transmit the packet with a multicast Internet Protocol address.

44. (Currently amended) The method of claim 28, further comprising:
receiving, via the network interface, one or more commands from a host; and
providing the root partition and the array ~~RA~~-partition based at least in part on the received one or more commands.
45. (New) The storage appliance of claim 17, wherein the plurality of characteristics includes the type of the array group, and the type comprises a RAID type 0, 1, 4, or 5.
46. (New) The storage appliance of claim 17, wherein the controller is further configured:
to buffer data transmitted in the data access command;
to transfer, via the network interface based at least in part on the data access command, data from the array partition to a parity partition of the plurality of array partitions; and
to save the buffered data in the array partition.